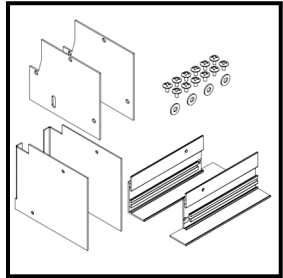


## System Overview

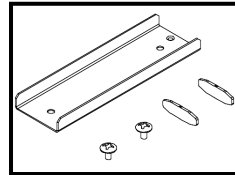
These instructions review how to install TruGroove Perimeter fixtures. Modules can be installed as individual standalone units, or they can be joined together to create continuous runs. The graphics below show the components required to install a typical run of TruGroove Perimeter fixtures. **IMPORTANT:** Read all instructions including fixture/sensor wiring AND mechanical details **before** beginning installation.



### Flat End Set

- Upper endplates (x2)
- Mid endplate left (x1)
- Mid endplate right (x1)
- Lower endplate left (x1)
- Lower endplate right (x1)
- Washers (x4)
- #8 sheet metal screws (x10)

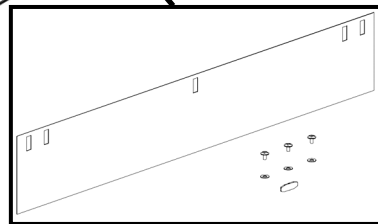
Wall Rail



### Joiner Kit

- Joiner bracket (x1)
- Biscuit aligners (x2)
- #8 sheet metal screws (x2)

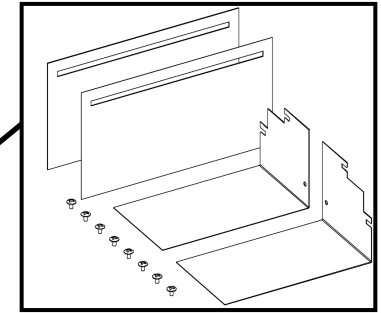
Trim Flange



### Drywall Panel Kit

- Drywall panel (x1)
- Biscuit aligner (x1)
- Washers (x3)
- #8 sheet metal screws (x3)

Components shown on this page are for drywall trim installation.



### Variable End Set

- Variable endplate left (x1)
- Variable endplate right (x1)
- Variable panels (x2)
- #8 sheet metal screws (x8)

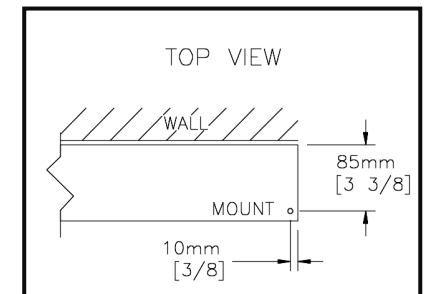
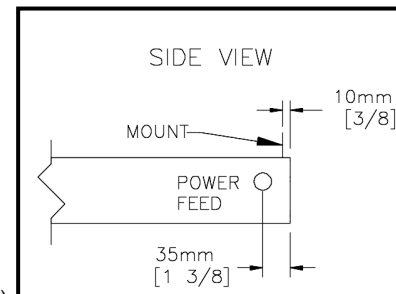
## Tools Required:

- Phillips screwdriver
- #2 Robertson screwdriver
- Right angle driver attachment

## Mount

## Spacing & Power Feed Location

TruGroove Perimeter modules are designed for drywall ceiling installation.

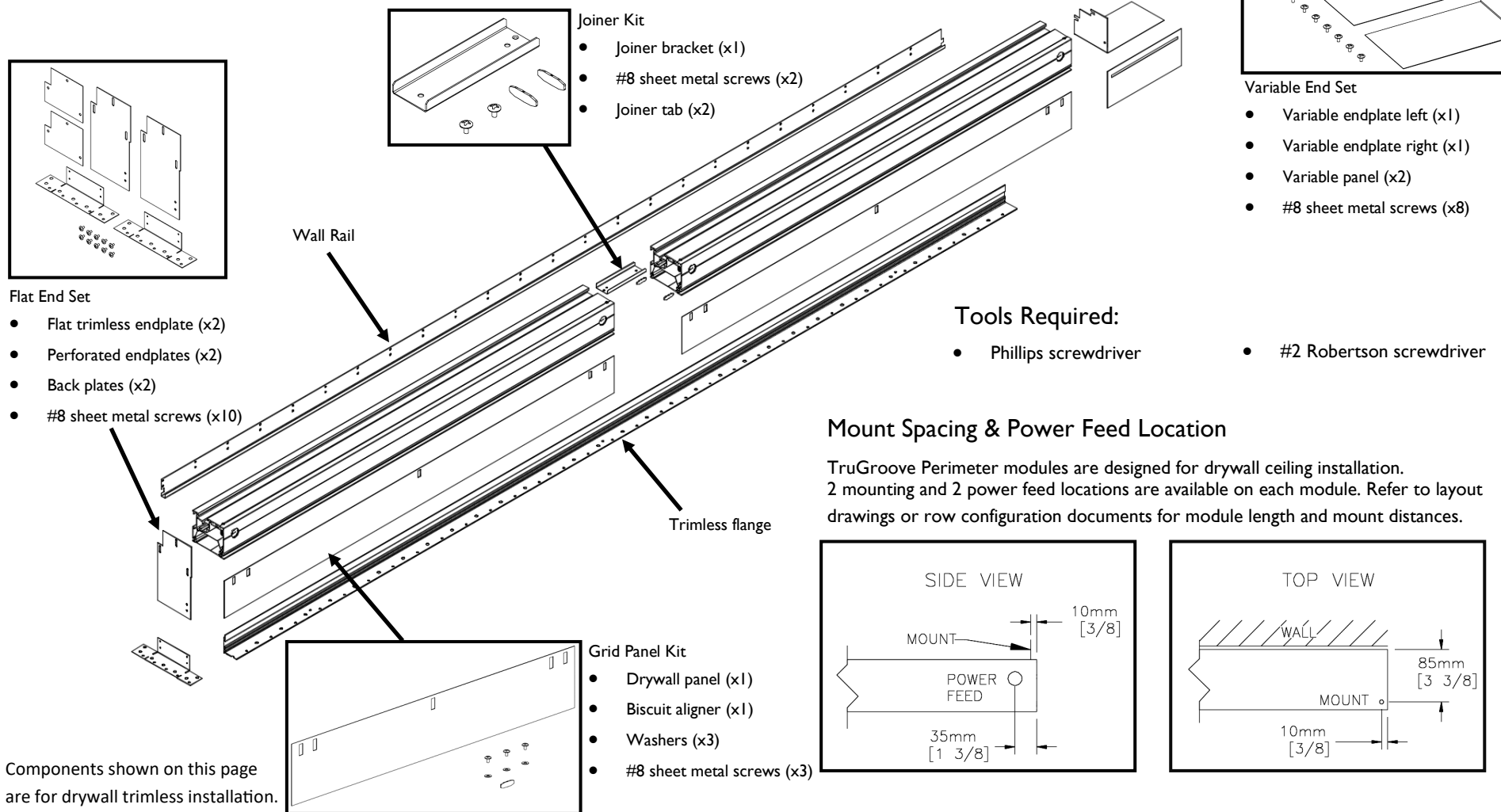


**! ATTENTION: Install in accordance with national and local building and electrical codes.**

Page 1

## System Overview

These instructions review how to install TruGroove Perimeter fixtures. Modules can be installed as individual standalone units, or they can be joined together to create continuous runs. The graphics below show the components required to install a typical run of TruGroove Perimeter fixtures. **IMPORTANT: Read all instructions before beginning installation.**

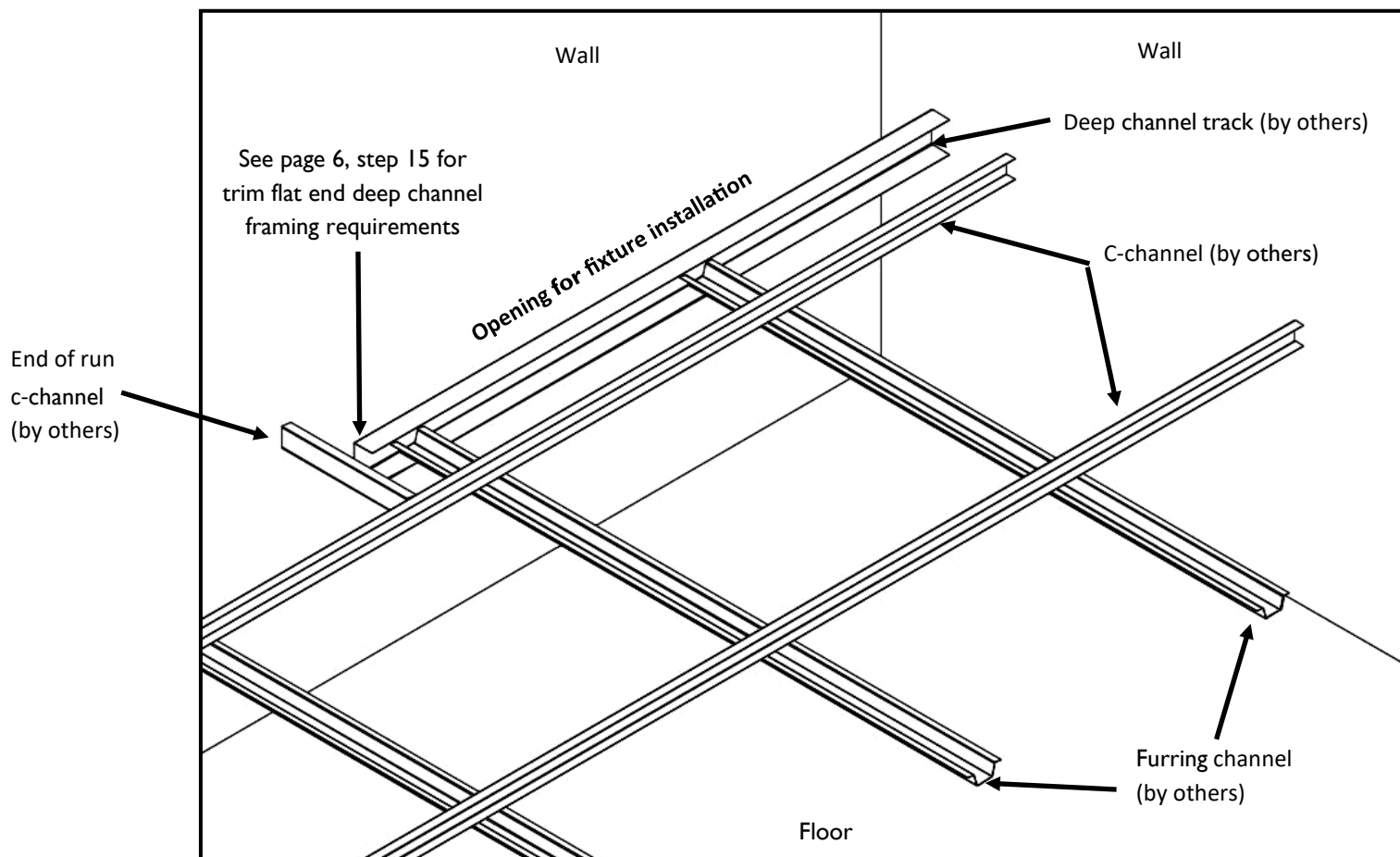


Components shown on this page are for drywall trimless installation.

**! ATTENTION: Install in accordance with national and local building and electrical codes.**

Page 2

## Ceiling Preparation/Framing Requirements



Typical commercial ceiling framing components are shown in the diagram above. Refer to layout drawings or row configuration documents for module or run lengths. Refer to page 4 for required framing opening. NOTE: Above finished floor dimension (AFF) is required and used for framing and wall rail installation reference.

**IMPORTANT:** For framing module ends, add 1/4" to run or module length at each end.

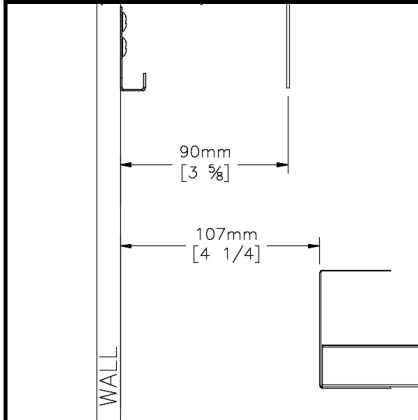
**IMPORTANT:** Deep channel track (by others) must be installed and framed to required opening shown on page 4.

**IMPORTANT:** These instructions cover ceiling drywall thickness of 1/2" - 5/8".

**! ATTENTION: Install in accordance with national and local building and electrical codes.**

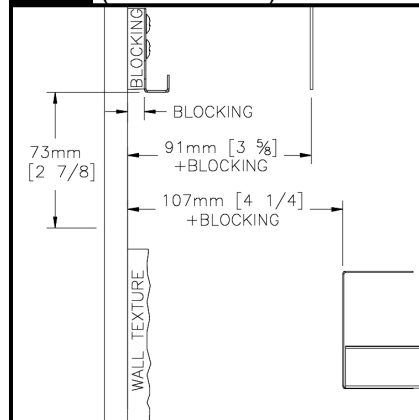
**Page 3**

### 1a Ceiling Preparation (Flat Wall)



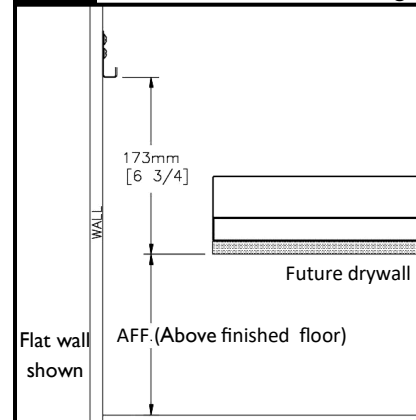
Ceiling preparation covers ceiling framing, attachment of wall rails and mounting bracket/cable installation. Above diagram covers all required dimensions for standard drywall installation. **NOTE:** Framed opening size must be followed for proper fit.

### 1b Ceiling Preparation (Textured Wall)



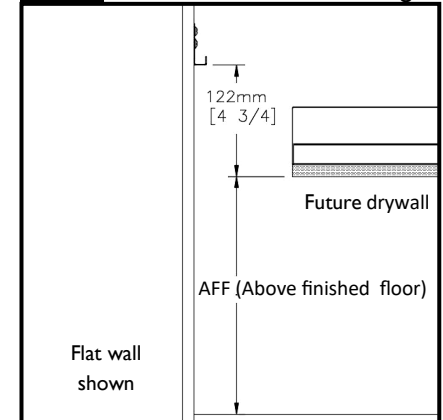
Optional: Textured walls. Above diagram covers all required dimensions for standard drywall installation with a textured wall. **IMPORTANT:** To ensure a proper fit, blocking (by others) must be the same as wall texture.

### 2a Wall Rail Installation 4" Regress



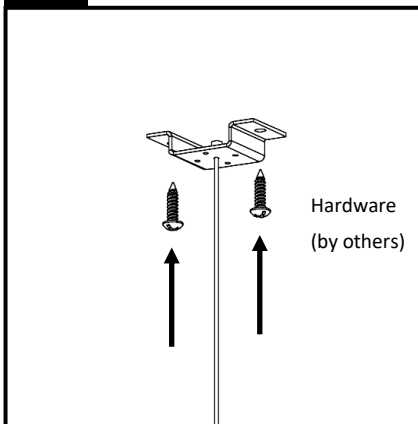
TruGroove perimeter fixture modules are available in two different above plenum heights. Refer to layout drawings for required regress for your job. Standard 4" regress is shown in above diagram. Attach wall rails (hardware by others) to wall studs at specified height from AFF dimension.

### 2b Wall Rail Installation 2" Regress



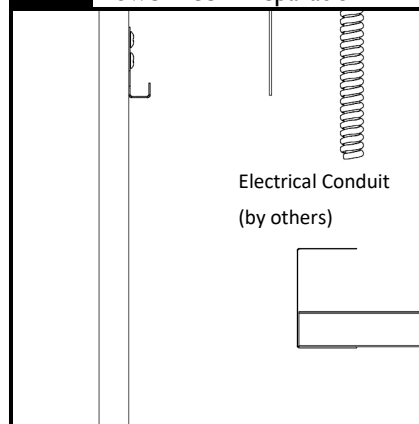
TruGroove perimeter fixture modules are available in two different above plenum heights. Refer to layout drawings for required regress for your job. Optional 2" regress is shown in above diagram. Attach wall rails (hardware by others) to wall studs at specified height from AFF dimension.

### 3 Mount Installation



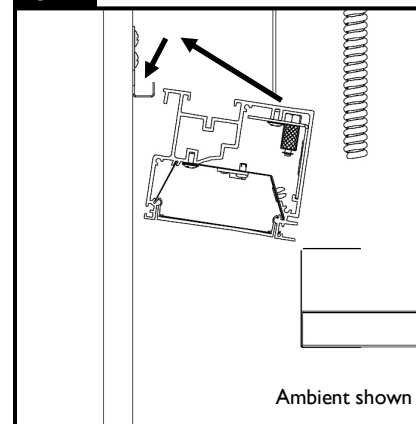
Refer to page 1 for typical suspension cable location on each fixture housing. To install the 1st module, two brackets and suspension cables are required. When joining luminaires, only one bracket and suspension cable are required for each joining module.

### 4 Power Feed Preparation



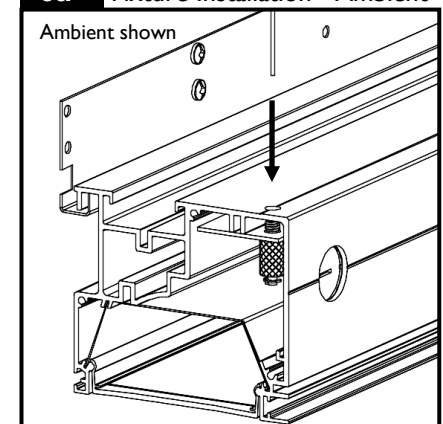
Determine required power feed locations. Refer to page 1 for typical power feed locations for each housing. Prepare power feed drop conduit and suspend close to required location. Attachment to fixture module is shown in step 8.

### 5 Fixture Installation



Lift fixture module past ceiling plane, Tilt as shown and engage housing hook on wall rail.

### 6a Fixture Installation - Ambient

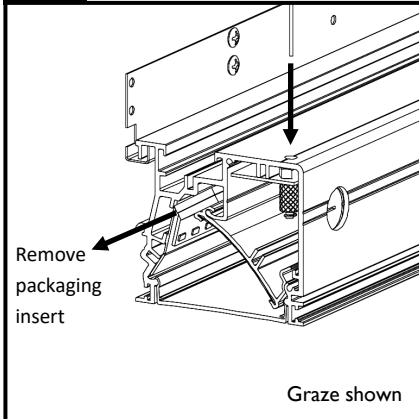


Insert suspension cables installed in step 3 through cable grippers inside fixture housing. **IMPORTANT:** Ensure suspension cables are vertical. Level fixture and trim excess cable to 1" below fixture. Tuck remaining cable inside fixture.

**! ATTENTION: Install in accordance with national and local building and electrical codes.**

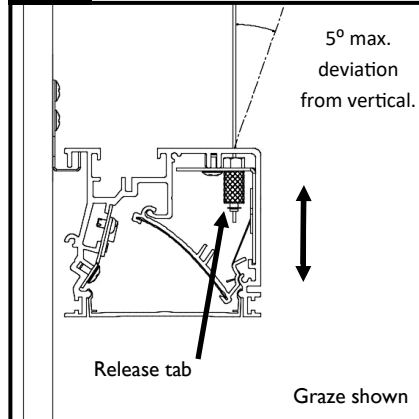
Page 4

## 6b Fixture Installation - Graze



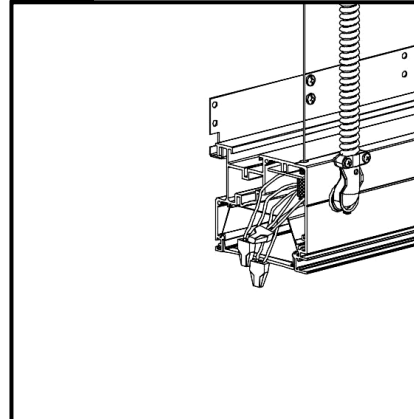
Remove graze packaging insert from both ends of housing. Engage housing on wall rail. Insert suspension cables installed in step 3 through cable grippers inside fixture housing. Pull cables through and refer to next step for levelling instructions.

## 7 Fixture Installation- Graze



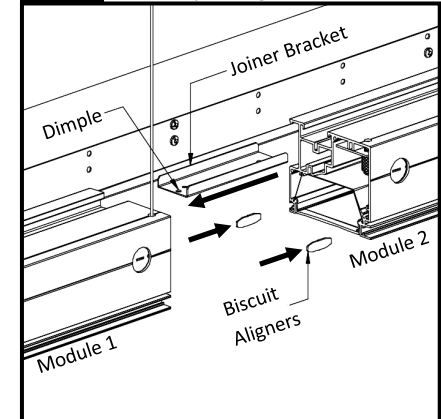
To adjust fixture level, support bottom of housing and release cable gripper plunger shown. Cable will slide freely and allow fine tuning of housing position. Repeat process at each cable gripper location using same procedure to ensure housing is level.

## 8 Power Feed Connection



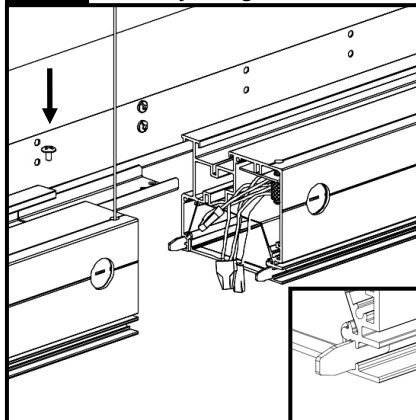
Break 7/8" knockout at end of housing at required power feed location. Install conduit connector (by others) and complete electrical connections. For a row end, tuck wires inside wiring cavity and follow endplate instructions starting in step 13.

## 9 Fixture Joining



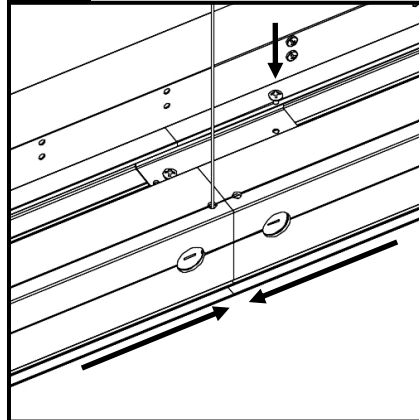
Slide dimpled side of joiner bracket approximately 1 inch inside top channel of module 1. Tap biscuit aligners just past half way inside module 2 as shown.

## 10 Fixture Joining



Secure joiner bracket to module 1 with screw provided. Slide module 2 on rail and engage on free end of joiner bracket. Complete all required electrical connections and tuck all wires inside both wiring cavities.

## 11 Fixture Joining



**IMPORTANT:** Before sliding fixtures together, make sure all wires are properly tucked inside fixture wiring cavities. Slide fixture housings together and attach second joiner bracket screw.

## 12a Trim Flange Installation

FOR TRIM FLANGE OPTION  
GO TO PAGE 6.

## 12b Trimless Flange Installation

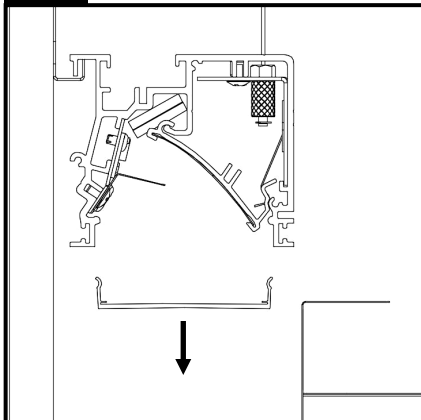
FOR TRIMLESS FLANGE OPTION  
SKIP TO PAGE 9.

**! ATTENTION: Install in accordance with national and local building and electrical codes.**

Page 5

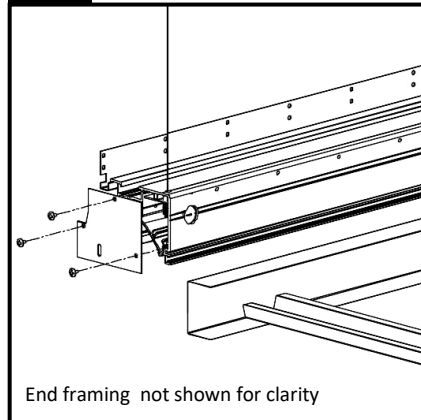


### 13 Flat End Installation



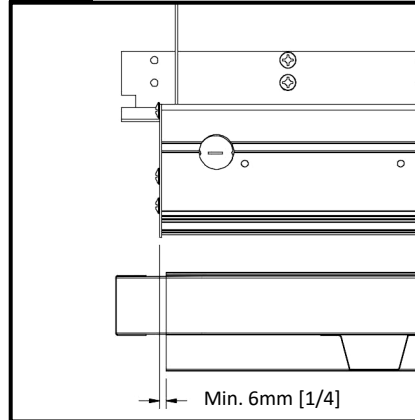
Remove lens from end module(s). Set aside and keep in a clean area until end of installation.

### 14 Flat End Installation



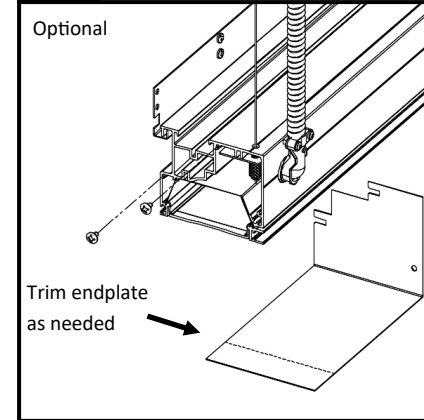
Attach upper endplate to housing with screws provided.

### 15 Flat End Installation



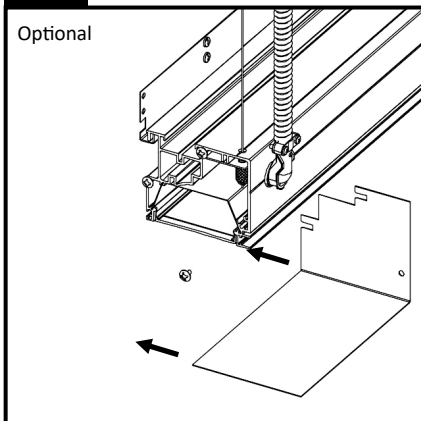
At module ends, trim deep channel track as shown to allow lower endplate installation later.

### 16 Variable End Installation



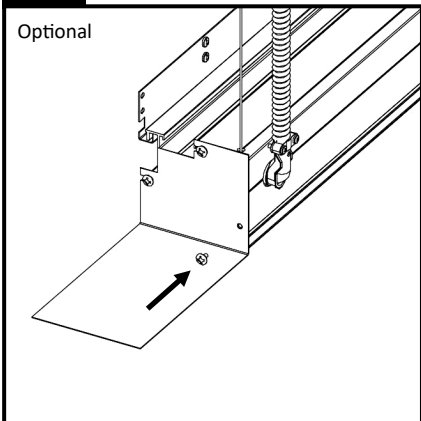
After fixture modules have been installed and levelled, measure distance between wall and fixture end. Trim variable endplate as required. **INSTALLATION TIP:** Before next step, attach 2 screws shown above to housing. Fully tighten then back off 1/2 turn.

### 17 Variable End Installation



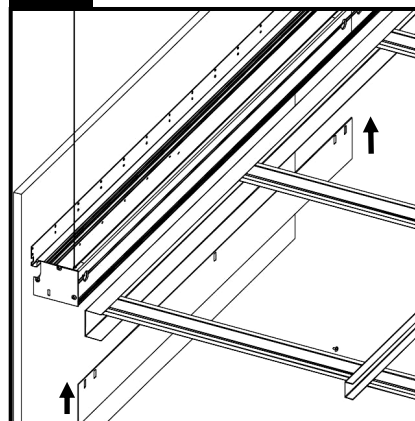
After variable endplate has been trimmed to size, slide endplate toward wall guiding open slots towards screws installed in step 16. Hook slots on screws and push all the way towards wall.

### 18 Variable End Installation



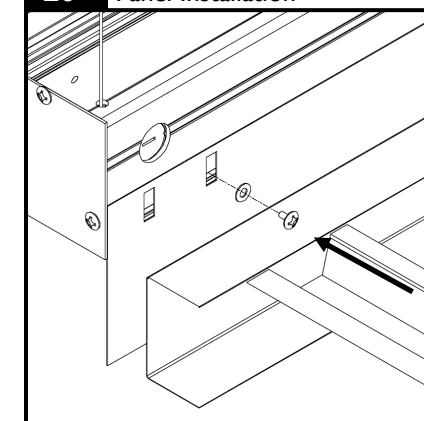
Check that endplate edge is flush with housing and attach final screw to lock in place.

### 19 Panel Installation



Starting at one end, align first grid panel with end of housing and lift in position.

### 20 Panel Installation

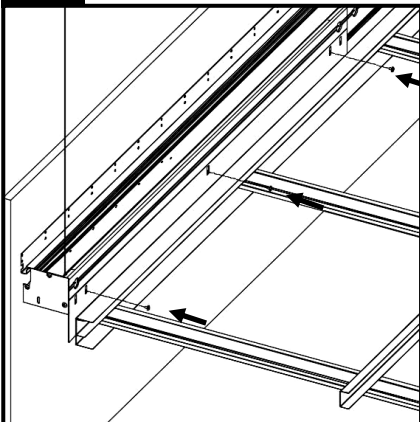


Insert washer inside rectangular panel slot. Attach to housing using screw provided. Fully tighten screw then back off 1/4 turn to allow panel to glide up and down without play.

**! ATTENTION: Install in accordance with national and local building and electrical codes.**

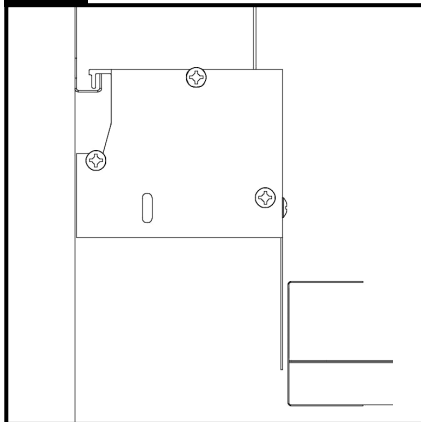
Page 6

## 21 Panel Installation



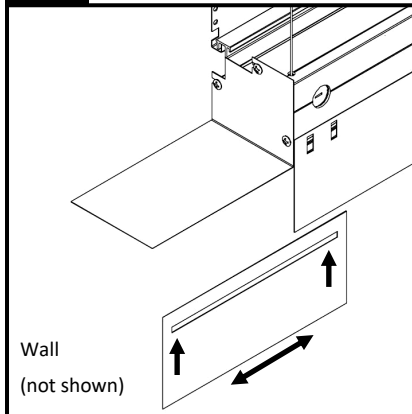
Repeat screw and washer installation procedure along panel length as shown. Repeat panel installation to complete required run.

## 22 Panel Installation



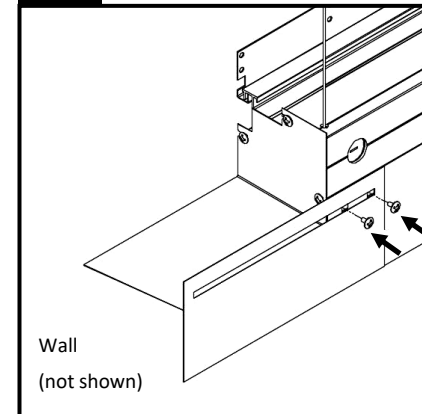
After installation, panels will rest as shown and be ready for trim flange installation. **IMPORTANT:** As panels are not accessible after drywall installation, ensure all panels can glide up and down freely without play. Adjust as needed.

## 23 Variable Panel Installation



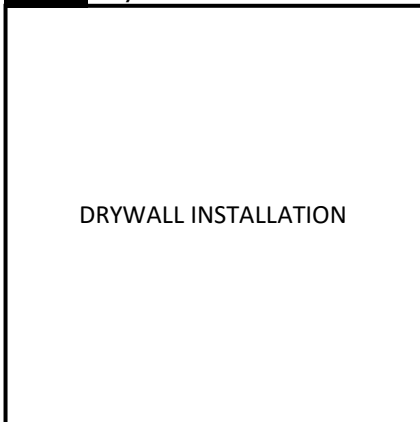
Raise variable and full size panel to housing level. Align full size panel with end of housing and overlap variable panel on top. Support in position for attachment.

## 24 Variable Panel Installation



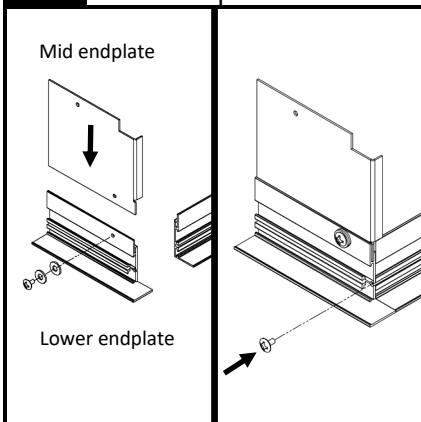
Follow instructions in step 20 and secure both panels together to housing as shown. Fully tighten screws and back off 1/4 turn to allow panels to glide freely without play. **NOTE:** When installed, the variable panel will match the length of variable endplate installed in steps 16-18.

## 25 Drywall Installation



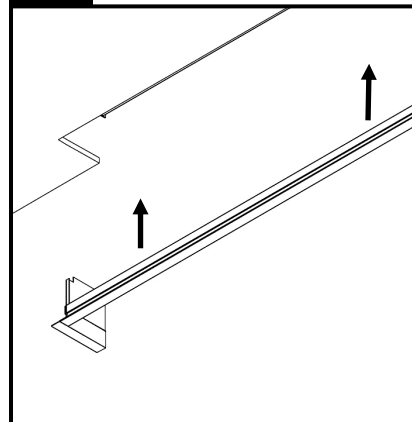
**NOTE:** These instructions cover drywall thickness of 1/2" - 5/8". Install drywall and trim flush to framing opening.

## 26 Lower Endplate Installation



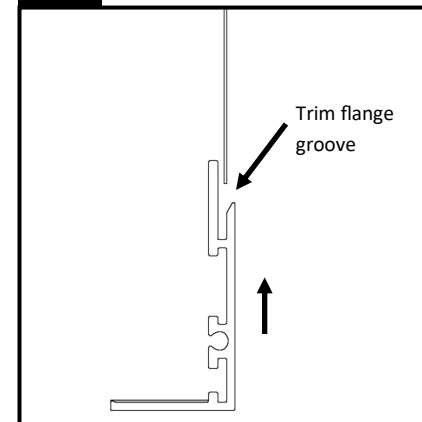
Engage mid endplate inside groove in lower endplate. Use washers (x2) and screw provided to join together as shown. Attach endplate to trim flange end with screw provided. **IMPORTANT:** Before tightening screw, make sure endplate and flange are aligned.

## 27 Trim Installation



Starting at one end, raise trim flange to ceiling opening and guide against outside edge of fixture endplate installed in steps 14-15.

## 28 Trim Installation

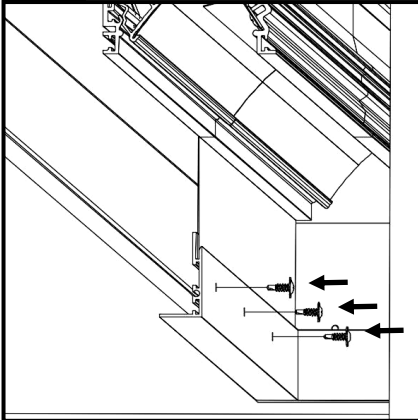


Lift trim flange towards ceiling making sure to engage panel edge into trim flange groove.

**! ATTENTION: Install in accordance with national and local building and electrical codes.**

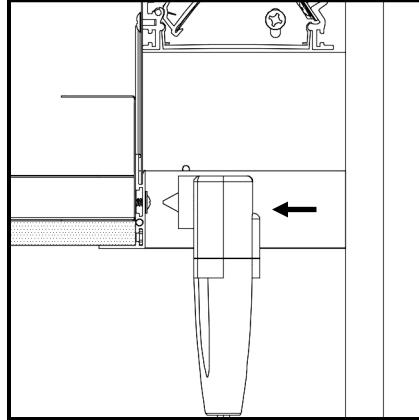
Page 7

### 29 Trim Flange Installation



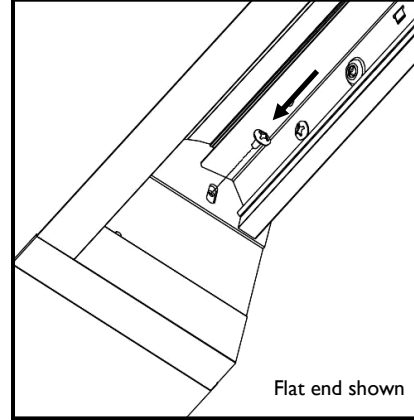
Align end of trim flange with upper fixture endplate. Using a right angle driver, secure trim flange to deep channel track with wafer head screws (by others).

### 30 Trim Flange Installation



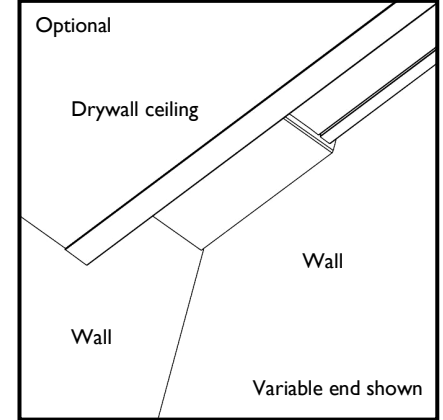
For proper attachment and alignment of trim flange sections, install screws at all hole locations.

### 31 Trim Flange Installation



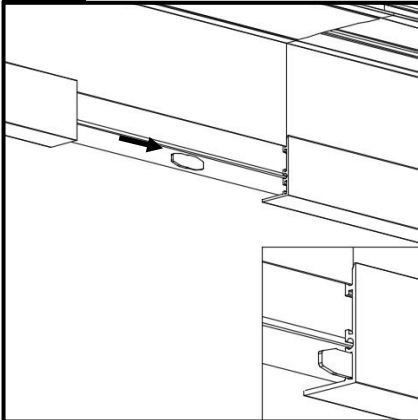
From inside ceiling opening, secure lower endplate to upper endplate using screw provided.

### 32 Trim Flange Installation



For a wall end, or wall to wall installation, install first trim flange section as shown in steps 29-30. To join trim flange sections, follow steps 33-34. Measure and cut the last section of trim flange to fit at other wall end.

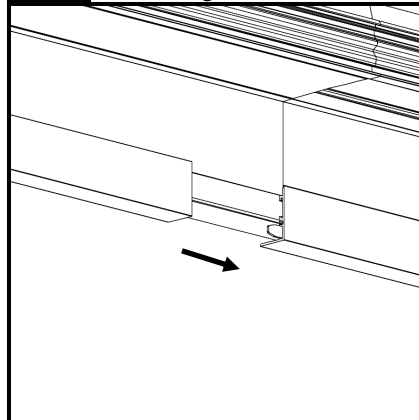
### 33 Trim Flange Installation



Tap biscuit aligner just past half way inside trim flange as shown.

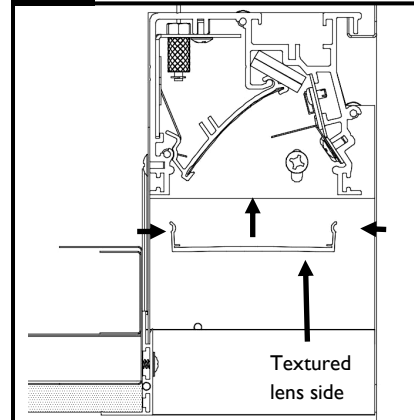
**INSTALLATION TIP:** When closing a run, tap biscuit aligner more than half way to create sufficient clearance for last trim flange section.

### 34 Trim Flange Installation



To attach the next piece of trim flange, align biscuit aligner with groove, slide trim flange against installed trim flange and attach with screws as shown in steps 29-30. Repeat steps to install all remaining trim flange sections.

### 35 Lens Installation



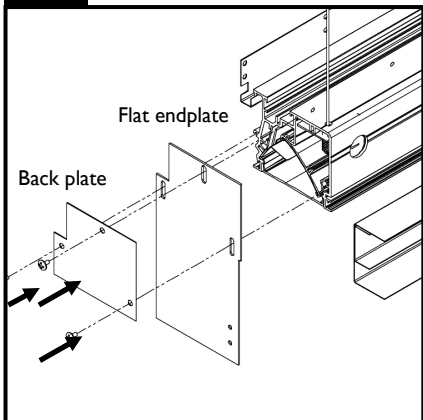
Re-install lens removed in step 13. For graze version shown above, position textured side of lens away from wall. **INSTALLATION TIP:** Start on one end, squeeze lens together and insert into housing. Gently push lens bottom up one inch at a time until done.

**! ATTENTION: Install in accordance with national and local building and electrical codes.**

Page 8

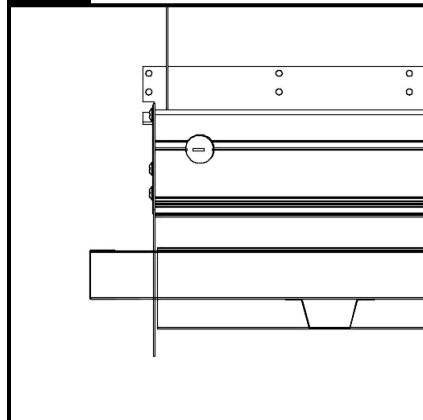


### 36 Flat End Installation



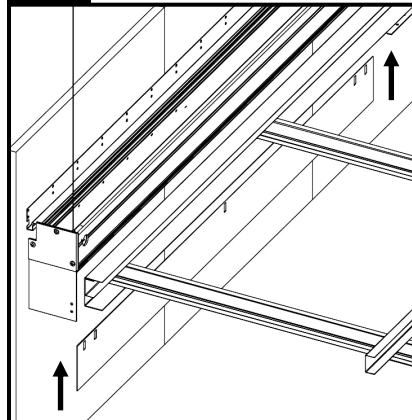
Install flat endplate and back plate to housing with screws provided. Fully tighten screws then back off 1/2 turn. Ensure the flat endplate can glide up and down without play.

### 37 Flat End Installation



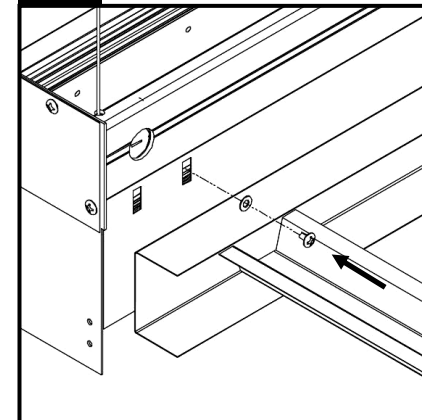
After installation, flat endplate will rest as shown and be ready for trimless flange installation. **IMPORTANT:** As panels are not accessible after drywall installation, ensure all panels can glide up and down freely without play. Adjust as needed.

### 38 Panel Installation



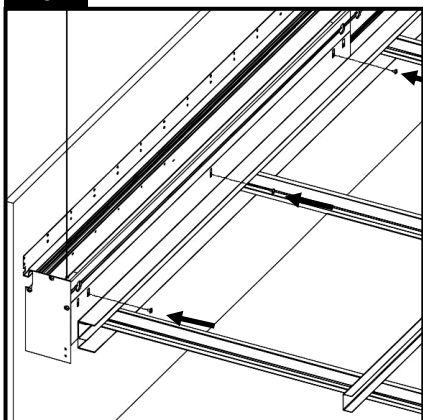
Starting at one end, align first grid panel with end of housing and lift in position.

### 39 Panel Installation



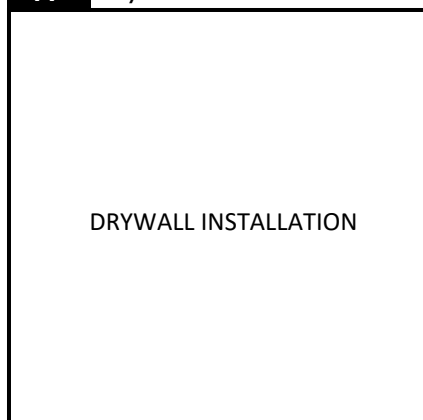
Insert washer inside rectangular panel slot. Attach to housing using screw provided. Fully tighten screw then back off 1/4 turn to allow panel to glide up and down without play.

### 40 Panel Installation



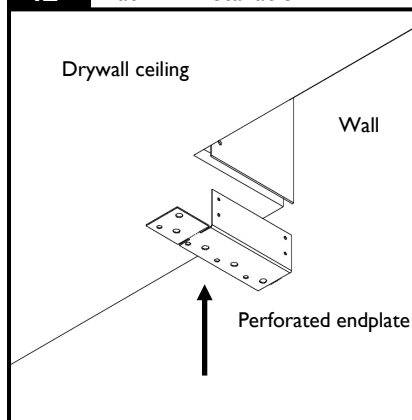
Repeat screw and washer installation procedure along panel length as shown. Repeat panel installation to complete required run.

### 41 Drywall Installation



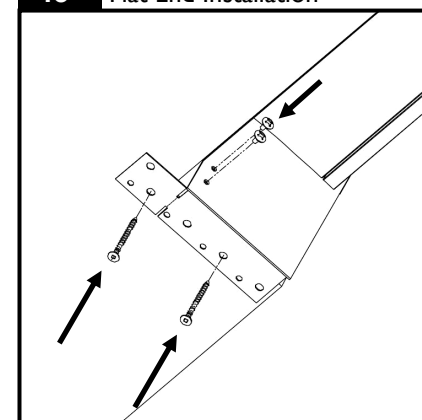
**NOTE:** These instructions cover drywall thickness of 1/2" - 5/8". Install drywall and trim flush to framing opening.

### 42 Flat End Installation



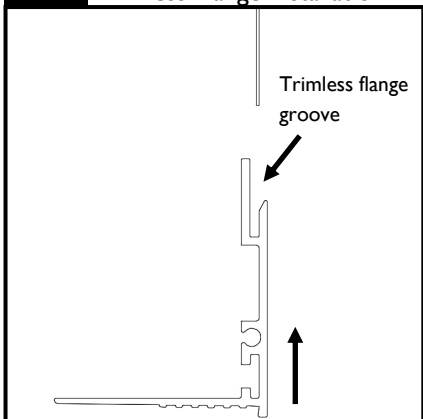
Raise perforated endplate to ceiling plane. Slide up between drywall and flat endplate.

### 43 Flat End Installation



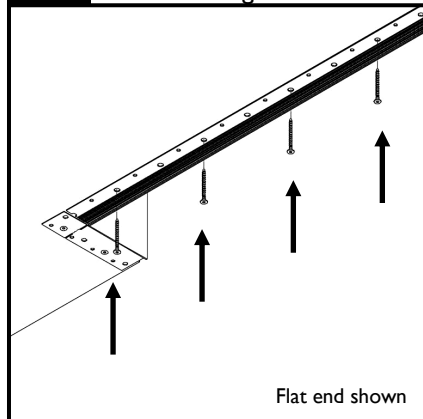
From inside ceiling opening, align holes with flat endplate and attach with screws (x2) provided. Lift against drywall and secure to structure using drywall screws (by others).

## 44 Trimless Flange Installation



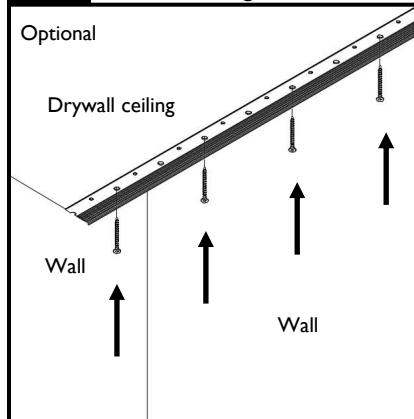
Lift trimless flange towards ceiling making sure to engage panel edge into trimless flange groove.

## 45 Trimless Flange Installation



Align end of trimless flange with perforated endplate. Push trimless flange tight against drywall and attach to structure using drywall screws (by others).

## 46 Trimless Flange Installation



For a wall end, or wall to wall installation, install first trimless flange section as shown in steps 43-44. To join trimless flange sections, follow steps 47-49. Measure and cut the last section of trimless flange to fit at other wall end.

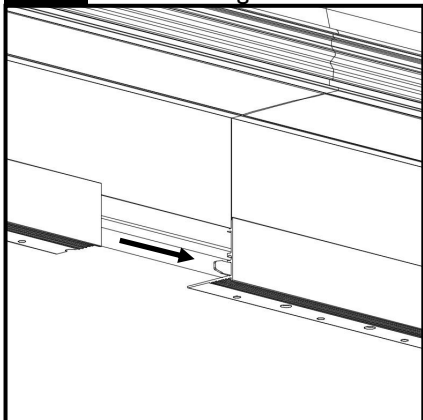
## 47 Trimless Flange Installation



Tap biscuit aligner just past half way inside trimless flange as shown.

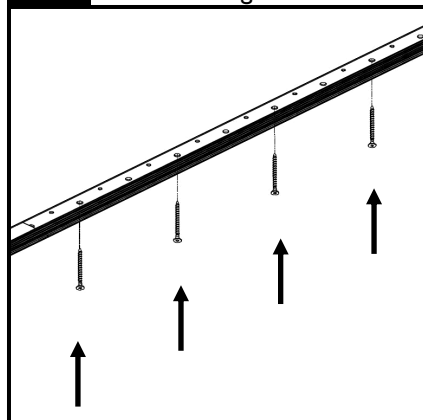
**INSTALLATION TIP:** When closing a run, tap biscuit aligner more than half way to create sufficient clearance for last trimless flange section.

## 48 Trimless Flange Installation



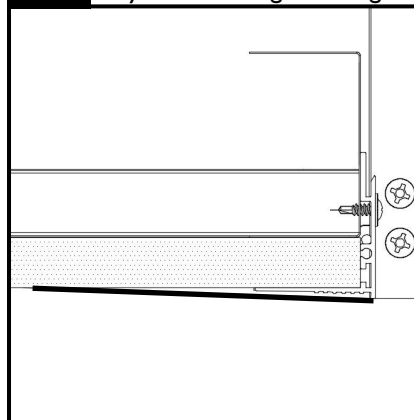
To attach the next trimless flange section, align biscuit aligner groove and slide trimless flange tightly against installed section.

## 49 Trimless Flange Installation



Secure trimless flange to structure using drywall screws as shown in step 44. Repeat steps to install all remaining trimless flange sections.

## 50 Drywall Mudding/Finishing



Mud, sand and paint ceiling as required.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

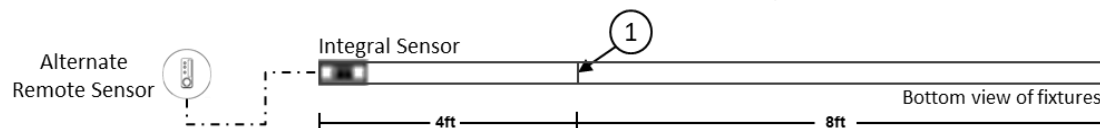
## Sensor in Rows

### Single Sensor Controlling Whole Row

1. Purple & brown (or purple & grey/pink) control wires **MUST** be connected between fixtures.

Note :

- A maximum of 8 drivers can be wired to 8 sensors; confirm fixture driver count with factory.



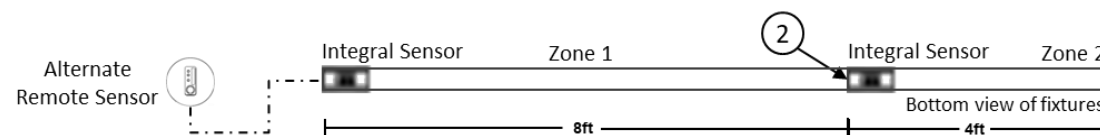
### Multiple Sensors Controlling Separates Zones in a Row

2. Purple & brown (or purple & grey/pink) control wires **MUST NOT** be connected between zones.

Notes :

- A maximum of 8 drivers can be wired to one sensor; confirm fixture driver count with factory.

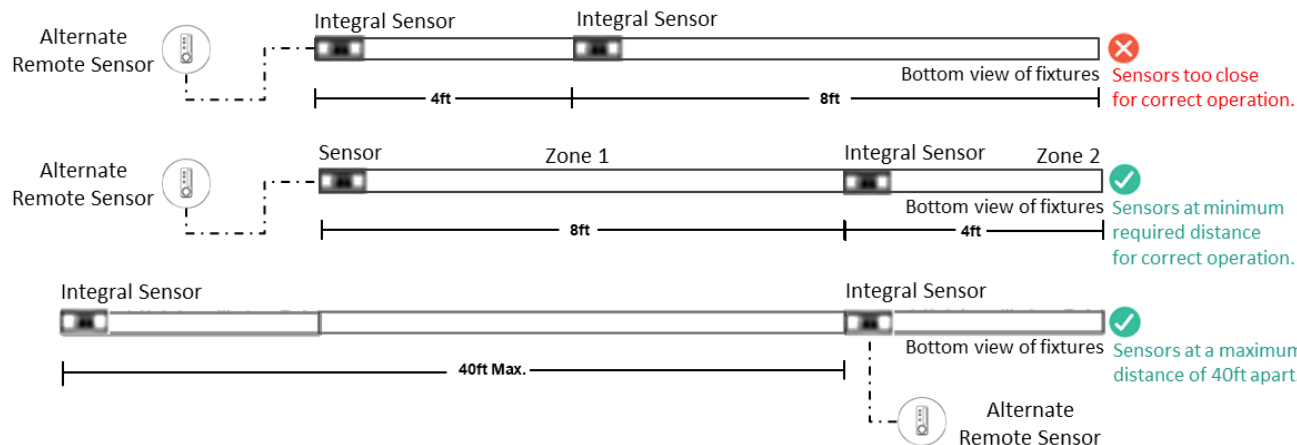
- Only one sensor is allowed on a wired zone. (Sensors can be paired together wirelessly via a mobile app).



## Sensor Spacing

- For correct operation, sensor should be placed a minimum distance of 8ft apart.

- Wireless sensor should be placed no further than 40ft apart for good wireless signal connection.

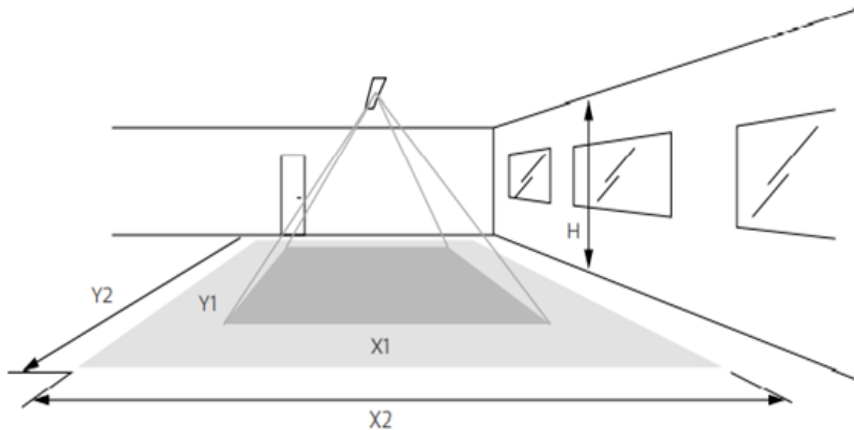


## Important Consideration When Using Sensor in a Row

- For fixtures with wireless sensors (CS, SB or RA options): **DO NOT** connect fixture purple and brown (or purple & grey/pink) control wires to an external dimming switch. Fixture mains wiring should not be connected to a circuit with an external on/off switch.
- For best aesthetic condition, place sensors at ends of row only so as not to break the continuous lens.
- For better occupancy coverage in longer rows, sensors may be placed mid run, but keep in mind this will break the continuous lens into discrete sections. Alternatively, remote sensors may be used, note the same wiring rules will apply.

### Occupancy Sensor Coverage:

Note: Longer dimension of detection area (Y1, Y2) is parallel to longer dimension of the luminaire.



### Daylight Sensor

The light sensor measures the total amount of light in a circular field of approximately 80% of the PIR detection area. The following aspects should be observed during installation:

- Minimum distance from the window  $\geq 2\text{ ft}$  (0.6m).
- Prevent light reflections from outside entering the sensor (for example sunlight reflection on a car hood) as this will lead to incorrect light regulation.

As a guideline the formula  $0.72 \times H$  can be used to calculate the minimum distance between the window and sensor whereby H is the height from the bottom of the window to the sensor.



Height	Minor movement		Major movement	
h	X1	Y1	X2	Y2
2.4 m (7.9 ft)	1.9 m (6.2 ft)	2.9 m (9.5 ft)	2.9 m (9.5 ft)	4.3 m (14.1 ft)
3 m (9.8 ft)	2.4 m (7.9 ft)	3.6 m (11.8 ft)	3.6 m (11.8 ft)	5.4 m (17.7 ft)

The detection area for the movement sensor can be roughly divided into two parts;

- Minor movements (person moving  $\leq 3\text{ ft/s}$  or  $0.9\text{ m/s}$ ).
- Major movements (person moving  $\geq 3\text{ ft/s}$  or  $0.9\text{ m/s}$ ).

### Photosensor spatial response

